R30 实验室搅拌机

使用说明书

概述

R30 实验室搅拌机采用免维护直流无刷电机驱动，适用于实验室低至中、高粘度液体的搅拌和混合。该机设计精巧，由微处理器精确控制转速，具安全回路、过载保护、数字显示功能和穿透式搅拌桨叶，使用方便。

虽然在连续运行时产生的热量使温度上升，但大比例的散热表面及内置风扇能迅速均匀地散热。两米长的电源线适用于大多数场合的应用，无须使用延长线。精确设计的空心轴可使搅拌杆自由插入并上下移动，便于更换搅拌容器。

请特别注意带此符号的警示事项

为避人身伤害，请特别注意说明书中带此警示符号的内容

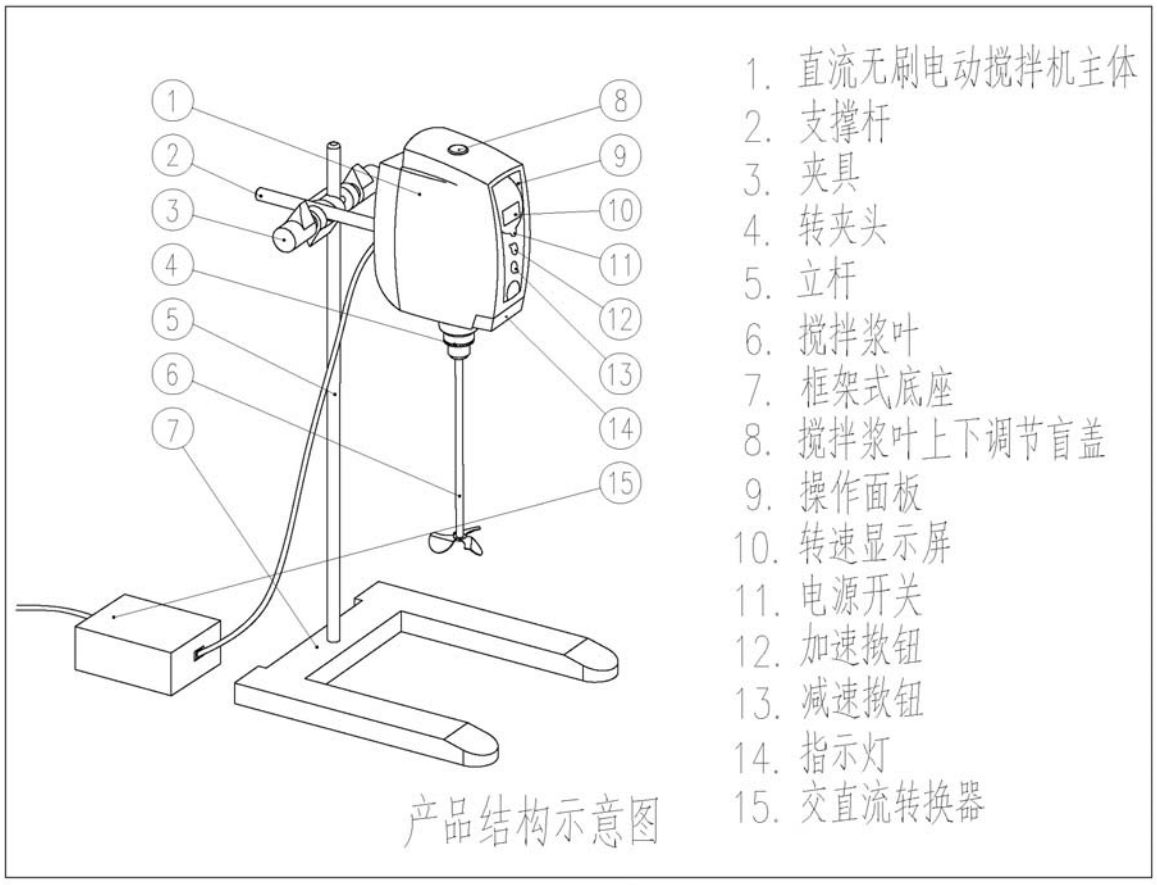
技术参数

电机功率：	110 W
额定电压：	220 V 50/60 Hz
速度显示：	数显式 （X10 rpm）
转速范围：	50---2000 rpm
调速方式：	无级调速
转夹头最大扭矩：	60 Ncm

转夹头夹持范围：	0.5---10 mm
搅拌量（H_2O）：	10---30 L
环境温度：	0---40° C
相对湿度：	80 %

⚠ 本设备禁止在易燃易爆环境中使用。搅拌机必须安装在支座上，不可手持操作。

安装



安装步骤

1. 从包装箱中取出框架式底座（7）将立杆（5）旋入底座的螺纹孔中拧紧。
2. 取出支撑杆（2）用 M5 内六角螺钉固定在搅拌机背面的安装孔中。
3. 将夹具（3）套入立杆（5）中，调至适当高度后旋紧夹具（3）的紧定端，使夹具（3）固定在立杆（5）上。
4. 托起带支撑杆（2）的搅拌机主体（1），将支撑杆套入夹具（3）中，旋紧夹具（3）的另一紧定端，将搅拌机固定好。
5. 根据实际使用情况，用专用工具松开转夹头（4）调节搅拌桨叶（6）在一合适高度，必要时可揭开搅拌桨叶上下调节盲盖（8）使搅拌桨叶（6）可向上穿过搅拌机主体（1）伸出至所需的高度，从而可轻易地更换容器，调节完成后拧紧转夹头（4）将搅拌桨叶（6）锁紧。

使用与注意事项

1. 开机前应首先检查调速揿钮是否处于最低转速状态，电源开关（11）应处于关闭状态。
2. 将交直流转换器（15）电源插头插入符合规定的电源插座中，其另一端针形插头插入搅拌器背面插口，打开电源开关（11）这时指示灯（14）亮，缓慢地调节加速揿钮（12）和减速揿钮（13）观察转速显示屏（10）上的转速显示，直至调至所需的转速。
3. 使用时可根据物料的粘度，调节不同的转速（50---2000rpm），一般粘度越低转速可越高。
4. 工作完毕后调节减速揿钮（13）使搅拌机处于最低转速状态，切断电源开关（11）拔出交直流转换器（15）电源插头。
5. 工作电压波动不得超过±5%，如电压波动过大，建议安装稳压器。
6. 搅拌机内装有电子元器件，小心轻放，注意保洁。

本机严禁空载或脱离介质运行，以免损坏设备。

⚠ 请勿在搅拌桨叶未置入搅拌容器时运转，以免损伤操作者身体。为确保安全，操作者应戴劳保帽子，以防头发被设备卷入。

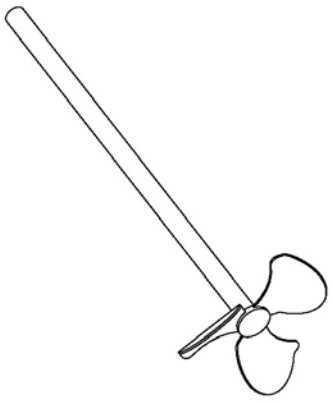
使用前请按国家有关电工安全标准制定出相关确保人身设备安全的操作规程，并严格按操作规程进行操作。

维护与故障分析

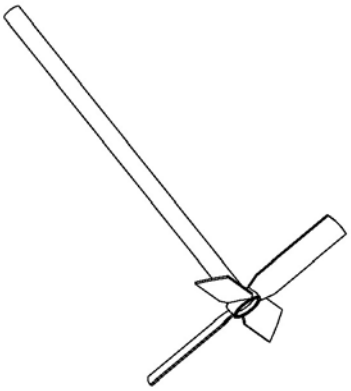
1. 清洗---每次使用完毕后，须及时清洗接触物料部位，以备下次使用。
2. 存放---本机须防潮，存放处避免阳光直射，存放及使用环境温度都不易超过 40° C。
3. 故障分析---使用中如出现电机不能启动，应先检查电源插头是否正常，接线是否脱落，若上述情况正常而故障仍未排除，请直接联系上海 FLUKO 公司售后服务部。

可选配的搅拌桨叶（搅拌头）---参看搅拌头图

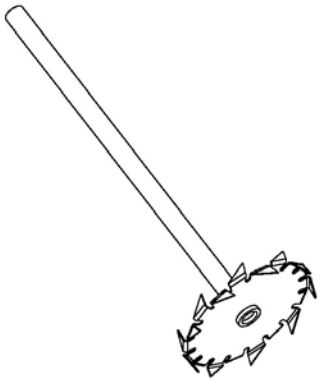
1. 三叶片螺旋桨式---标准型搅拌头，使混合介质由上至下轴向流动，剪切力小。中高速使用。
2. 四叶片螺旋桨式---使混合介质由上向下轴向流动，产生局部的剪切力。中高速使用。
3. 溶解式---使混合介质由上、下均产生径向流动，形成的强紊流和高剪切力可以粉碎液体中颗粒。中高速使用。
4. 离心式---双叶片随速度增大而张开，适于窄口容器中使用。搅拌效果类似于四叶片螺旋桨式。中高速使用。
5. 扇片式---产生切向流动，紊流小，热交换性能良好，应用于需柔和搅拌介质的场合。中低速使用。
6. 锚式---产生切向流动，边缘形成高剪切率。使混合介质不易沉积在容器壁上。低速使用。应用于聚合物反应及液体中矿物质的分散，是理想的中高粘度流体的搅拌元件。



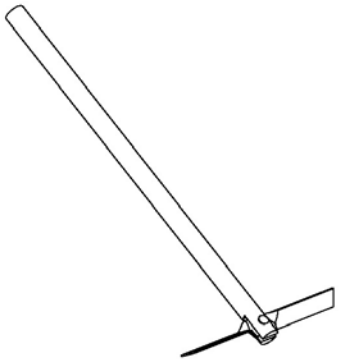
1. 三叶片螺旋桨式(标准型)



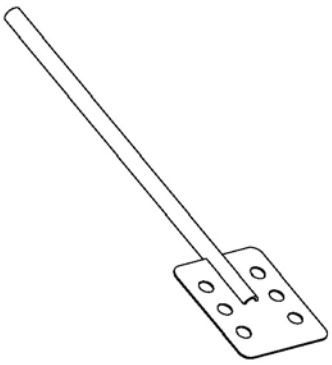
2. 四叶片螺旋桨式



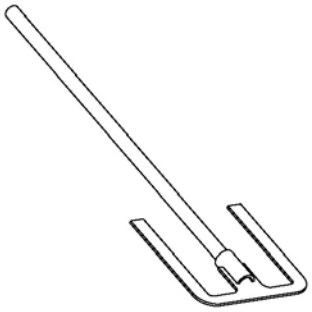
3. 溶解式



4. 离心式



5. 扇片式



6. 锚式

搅拌头图

售后服务

1. 本产品自购买之日起一年内，因产品本身质量造成的问题，FLUKO 公司将负责保修。如因用户操作不当或人为损坏，FLUKO 公司则不承担任何责任及相关的维护费用。
2. 保修产品须持有产品保修卡。
3. 自行拆卸过内部结构的产品或自行拆卸我公司于说明书中注明禁止拆卸的零部件时将被视为人为损坏。
4. 保修方法：
   a. 寄回我公司售后服务部 （免费服务电话：8008202190）；
   b. 送至当地 FLUKO 经销商处维修：
5. 超过保修期的产品，产生的维修费用由用户自己承担。

装 箱 单

型号: Eumix-R30

品名: 实验室搅拌机

序号	名　　称		单 位	数　量
1	搅拌机主体 （与支撑杆已装配好）		台	1
2	交直流转换器（即电源）		套	1
3	转夹头专用工具		件	1
4	夹具		付	1
5	立杆		根	1
6	搅拌桨叶		根	1
7	框架式底座	框竖臂	件	2
		框横臂	件	1
		GB70-85 M8X45 内六角螺钉	只	2
		销	只	2
8	M8 内六角板手 （底座装配用）		件	1
9	中文说明书		份	1
10	保修卡、合格证		份	各 1

R30 Lab Type Homogenizer

Operating Manual

Description

Driven by maintenance-free no- brush DC electric motor, R30 Lab Type Homogenizer is suitable for mixing and homogenizing low, medium and high viscosity liquids in laboratories. Delicately designed with rotation speed precision-engineered by microprocessor, it is easy for operation with safety circuit, overloading protection, digital display and penetration type stator/rotor generator.

Although the temperature of the unit will rise due to heat arising from its nonstop operation, the large-scale radiation surface and built-in fan will rapidly cool the unit evenly. The 2-meter long power supply wire is suitable for most cases with no need for extension. The precisely designed hollow axis makes the generator freely insert and move up and down for easy change of mixing vessels.

Caution: Warnings marked with this symbol should be specially noticed.

Caution: Contents in the Operating Manual marked with this symbol should be specially noticed to

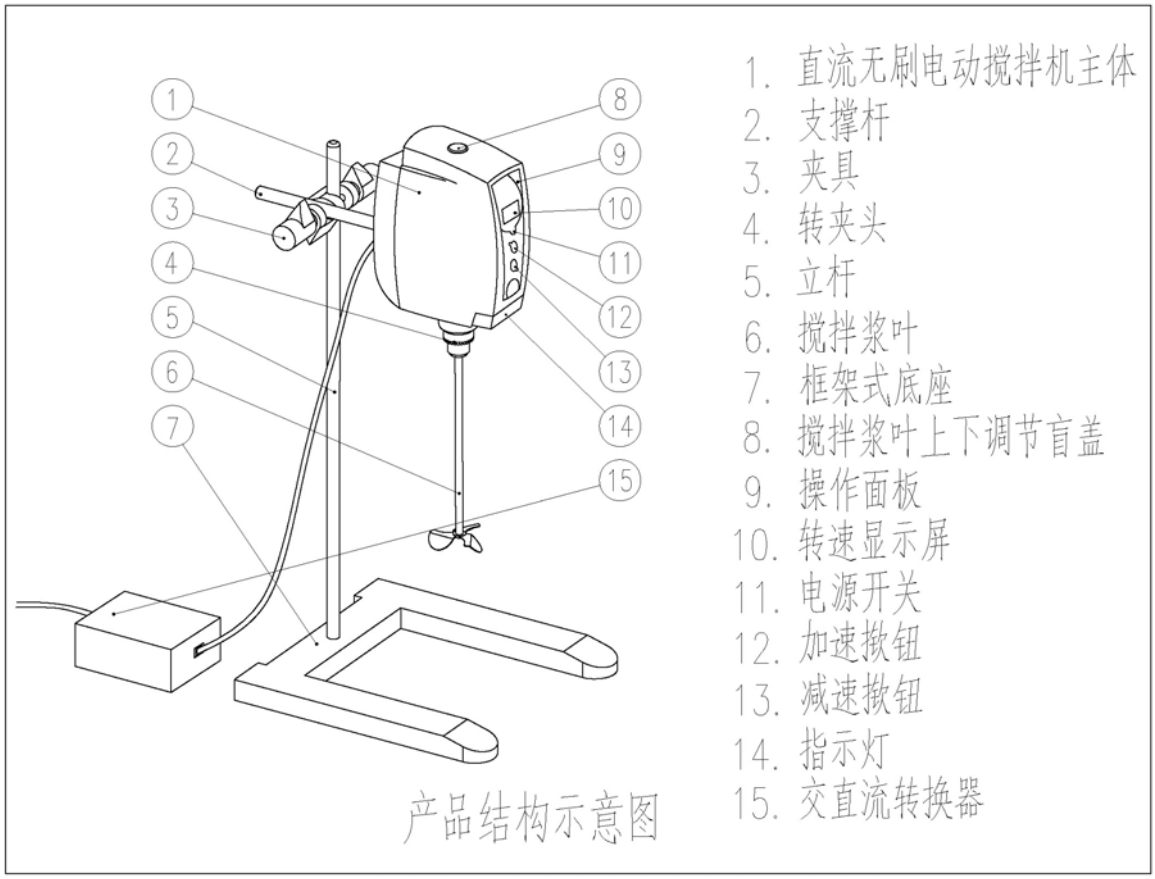
avoid personal injury.

Technical Parameters

Electric Motor Power:	110 W
Voltage Requirement:	220 V 50/60 Hz
Rotation Speed Display:	Digital Display (X10 rpm)
Rotation Speed Range:	50---2000 rpm
Rotation Speed Adjustment Mode:	Stepless Adjustment
Rotary Clincher Torsion:	60 Ncm
Rotary Clinching Range:	0.5---10 mm
Working Capacity (H_2O):	10---30 L
Working Environment Temperature:	0---40° C
Working Environment Relative Humidity:	80 %

This unit is prohibited from operation in inflammable and explosion-prone environment. Install the unit on the base before operation. Handheld operation is forbidden

Installation



产品结构示意图：Product Structure Illustration

1. 直流无刷电动搅拌机主体： DC No-Brush Electric Homogenizer Principle Part
2. 支撑杆：Supporting Pole
3. 夹具：Clamp
4. 转夹头：Rotary Clincher
5. 立杆：Iron Pole
6. 搅拌桨叶：Stator/rotor generator
7. 框架式底座：Framework Type Base
8. 搅拌桨叶上下调节盲盖：Generator Up/Down Movement Cap
9. 操作面板：Operation Panel
10. 转速显示屏：Rotation Speed Display
11. 电源开关：Power Switch(on/off button)
12. 加速揿纽：Speed-up Button
13. 减速揿纽：Speed-down Button
14. 指示灯：Indicator
15. 交直流转换器：AC/DC Converter

Installation Steps

1. Take the framework type base (7) out of package, fix the iron pole (5) tightly to the base, then screw on the nut.
2. Take supporting pole (2); fasten it tightly with M5 hexagonal screws on the back of the unit.
3. Set clamp(3)to the iron pole (5) ;at proper height ,screw tight one end of the clamp to fasten clamp (3) tightly to the iron pole (5) .
4. Raise the principle part of the unit(1)with supporting pole (2), set the supporting pole to clamp (3), screw tight another end of the clamp (3) to fasten the unit.
5. According to different operation situations, turn loose the rotary clincher (4) with special tools to adjust generator(6) to a proper height. If necessary, remove the generator up/down movement cap (8) to let the generator (6) penetrate through the principal part (1) reaching the needed height for convenient change of vessels. Screw tight rotary clincher (4) to fasten the generator (6) tight.

Operation and Cautions:

1. Before starting, check whether the rotation speed button is at the lowest rotation speed status and whether the power switch(on/off button) (11) is off.
2. Plug the AC/DC converter (15) into the power socket consistent with the power requirement of the unit, put the pin-shape plug into the jack on the back of the unit, turn on the power switch(on/off button) (11) and the indicator (14) will be lighted. Observing the rotation speed appears on the rotary speed display (10) ,gradually adjust the speed-up button (12) and speed-down button (13) to the desired speed.
3. Rotation speed (50---2000rpm) can be adjusted according to the viscosity of material. Generally,

lower viscosity materials require higher rotation speed.

4. After work is done, adjust speed-down button (13) to slow down the generator to the lowest rotation speed status. Turn off power switch (11) and unplug the power supply of AC/DC converter.
5. Fluctuations of working voltage of the unit should never exceed 5%. It is recommended that a voltage regulator be installed if fluctuations are too big.
6. With electronic components installed within the unit, please handle carefully and keep clean.

The unit is strictly prohibited from empty running, as this may cause damage.

Do not operate before the generator is put inside the vessel to avoid personal injury to the operator. To ensure safety, it is recommended that operator wear safety helmet to avoid hair being entangled. Please establish and follow strictly safety operation procedures in accordance with relevant state electronic works safety standards for human and equipment.

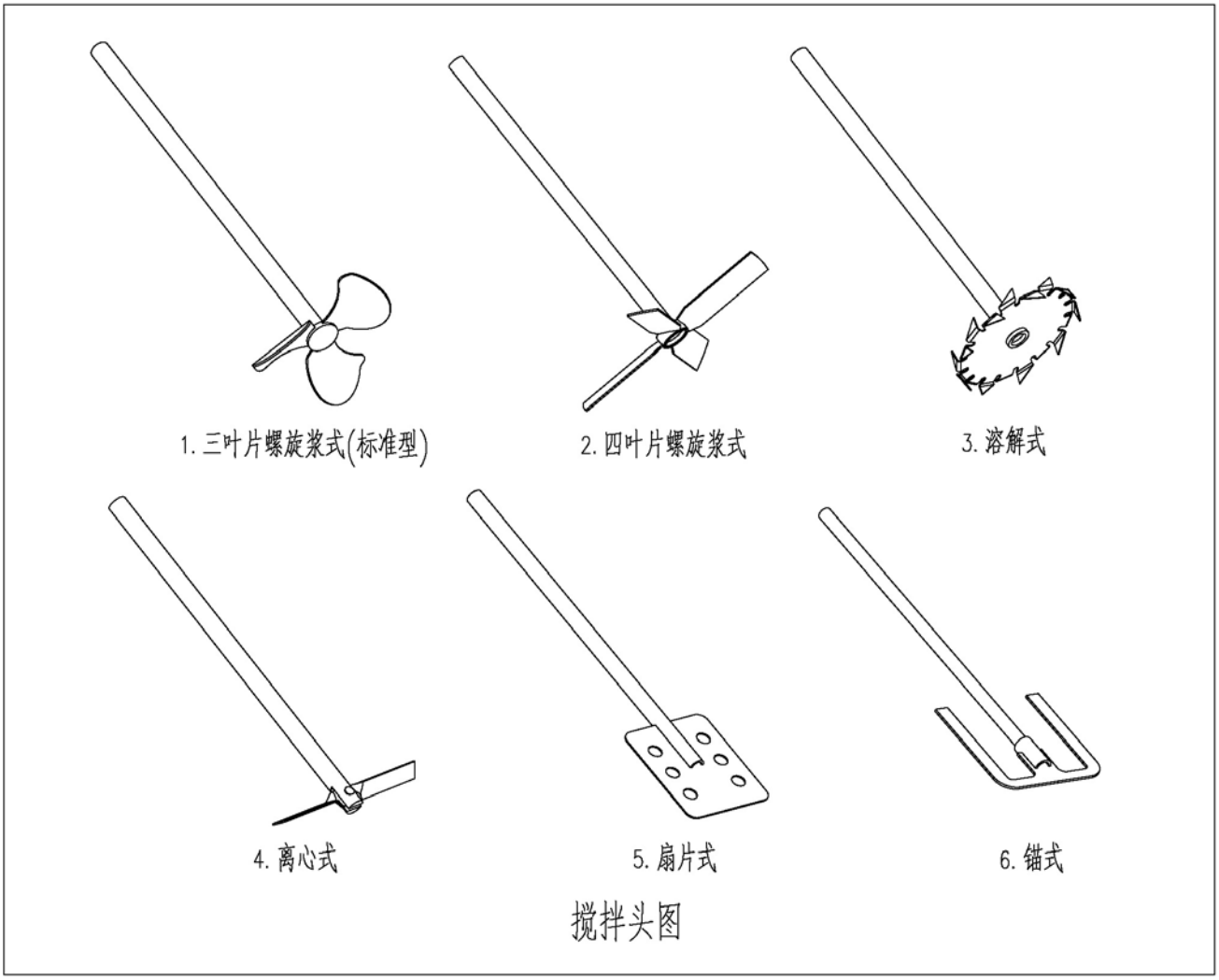
Maintenance and Malfunction Analysis

1. Cleaning---The part of generator contacting the material including dispersing head should be cleaned timely after each operation for next use.
2. Storing---The unit should be kept away from moisture and direct sun light. The unit should be operated and kept in place with ambient temperature no more than 40° C.
3. Malfunction Analysis—If the electric motor cannot start, first check whether the power supply plug and connection are proper. If malfunction still exists,

please contact FLUKO After-Sales Service in Shanghai.

Available Generator (Dispersing head) Types---See Generator Illustration

1. Three-Leaf Propeller Type (Standard Type)--- make the material flow from upper axis to lower axis with small cutting force. It is for medium or high rotation speed operation.
2. Four-Leaf Propeller Type --- make the material flow from upper axis to lower axis with topical cutting force. It is for medium or high rotation speed operation.
3. Solution Type ---Produce material radial flow at both upper axis and lower axis to form strong turbulence and strong cutting force to ground the granules in the liquids. It is for medium or high rotation speed operation.
4. Centrifuge Type ---The two leaves will expand with the increase of rotation speed; it is suitable for vessels with narrow openings. The mixing performance is similar to that of four-leaf propeller type. It is for medium or high rotation speed operation.
5. Fan Blade Type ---Produce tangential flow and small turbulence with good heat exchange performance. It is used for gentle mixing cases. It is for medium or low rotation speed operation.
6. Anchor Type ---Produce tangential flow with high cutting rate at edges, making it hard for material deposits on the inner wall of the vessel. It is for low rotation speed operation. Used in polymer reactions and the dispersing of minerals in liquids, it is an ideal mixing components for medium and high viscosity liquids.



搅拌头图

搅拌头图： Generator Figure

1. 三叶片螺旋桨式（标准型）：Three-Leaf Wind Stick Type (Standard Type)
2. 四叶片螺旋桨式：Four-Leaf Wind Stick Type
3. 溶解式：Solution Type
4. 离心式：Centrifuge Type
5. 扇片式：Fan Blade Type
6. 锚式： Anchor Type

After-Sales Service

1. FLUKO Company provides free maintenance service during the warranty period (one year since the purchasing day). However, if it is proven that the malfunction is caused by the improper operation or intended damage on the buyer’s part, FLUKO Company will be free of any obligations arising from it.
2. Warranty card should be submitted while delivering the unit for maintenance.
3. Disassemble the unit without noticing FLUKO Company or Dismantle parts not to be dismantled as listed in the Operating Manual will be regarded as intended damage.
4. When deliver the unit for maintenance, send it back to our After-sales Service (Toll free service hotline: 800-820-2190) or take the unit to the local FLUKO dealer.

5. For units expiring the warranty period, the user should undertake the cost.